

REMARKS:

This paper is herewith filed in response to the Examiner's final Office Action mailed on March 30, 2007 for the above-captioned U.S. Patent Application. This office action is a final rejection of claims 1-28 of the application.

More specifically, the Examiner has rejected claims 1, 2, 4-8, and 10-20 under 35 USC 103(a) as being unpatentable over Bourlas (US2002/0119783), in view of Kondo (US5,748,624) and Demjanenko (US2002/0051501); rejected claims 3 and 9 under 35 USC 103(a) over Bourlas in view of Kondo and Demjanenko and in further view of Raghavan; rejected claims 21, 22, 24, 25, 27, and 28 as being unpatentable over Uebayashi (US6,963,551), in view of Kondo and Demjanenko; rejected claim 23 over Uebayashi, in view of Kondo and Demjanenko, and further in view of Raghavan (US2003/0134607); and rejected claim 26 under 35 USC 103(a) as being unpatentable over Uebayashi in view of Kondo and Demjanenko and further in view of Leung (US7,124,193).

Regarding the rejection of claim 1, the Examiner states in the Office Action that:

“[Bourlas discloses] granting system resources to the mobile station based at least in part on a bandwidth requirement of the mobile station, wherein for a mobile station having a high bandwidth requirement, **the mobile station is preferentially granted system resources, as compared to another mobile station having a lower bandwidth requirement**”

The Applicants respectfully submit that the Examiner's characterization fails to read on the relevant elements of claim 1.

Claim 1 recites:

“A method for granting system access to mobile stations, comprising:
receiving a call admission request from a mobile station at the edge of a cell;
and granting system resources to the mobile station based at least in part on a

bandwidth requirement of the mobile station, wherein for a mobile station having a high bandwidth requirement, the mobile station is preferentially granted system resources, **as compared to another mobile station requesting call admission** and having a lower bandwidth requirement, by being assigned a plurality of time slots per frame for forming one radio information block, and is operated with a coding technique that employs an iterative decoding technique.”

As claim 1 explicitly recites, the resources are granted in the context of receiving a call admission request from a mobile station at the edge of a cell. System resources are then granted to the mobile station based at least in part on a bandwidth requirement of the mobile station. For a mobile station having a high bandwidth requirement, the mobile station is preferentially granted system resources, **as compared to another mobile station requesting call admission** and having a lower bandwidth requirement.

As cited by the Examiner, Bourlas discloses:

“The wireless communication system 100 can provide **“bandwidth-on-demand”** to the CPEs. Thus, **the uplink can include bandwidth requests for new and existing connections from end users**. The CPEs request bandwidth allocations from their respective base station 102 based upon the type and quality of service requested by the end users served by the CPE,” (emphasis added), (par.[0039]); and

To this end, the type and quality of service available to the end users are variable and selectable. **The amount of bandwidth dedicated to a given service can be determined by the information rate and the quality of service required by that service (and also taking into account bandwidth availability and other system parameters** as will be described below),” (emphasis added), (par. [0040]).

The Applicants contend that these paragraphs as cited by the Examiner merely disclose a method in Bourland to provide differing bandwidth allocations for new and existing connections.

Further, in the reference cited by the Examiner Bourlas discloses:

“A CPE or base station can continue an existing connection or allow a new connection depending on, for example, a user's defined quality of service, bandwidth needs, and transmission quality. Thus, each end user potentially uses a different broadband service having different bandwidth and latency requirements. Moreover, each user can select a portion(s) of their bandwidth to have variable priority levels, or precedence,” (par. [0039]).

However, although as cited by the Examiner Bourlas discloses that a new connection can be allowed dependent on bandwidth needs there still is nothing in Bourlas to disclose or suggest allocating resources to either a first mobile station or a second mobile station where both mobile stations are requesting call admission and any preferential granting is based upon a bandwidth requirement comparison of the two.

The majority of the teachings cited by the Examiner relate to dynamically allocating bandwidth for **existing connections**. Specifically with regards to **requesting call admission** which is a relevant element of claim 1, Bourlas clearly discloses:

“The CAC module 206 determines whether there is enough bandwidth to allow the new connection. This can be determined by summing the hard bandwidth commitments for each connection on each CPE 104(a), 104(b), 104(c) (see FIG. 1). [...] The CAC module 206 compares the total hard bandwidth commitments to an air link line rate. The air link line rate is the amount of bandwidth available between the CPEs and base station. **If the air link line rate exceeds the total hard bandwidth commitments, the new connection is allowed. If the total hard bandwidth commitments meet or exceed the air link line rate, the CAC module 206 denies the new connection,**” (emphasis added), (par. [0045]).

Thus, for a call admission request in Bourlas the CAC module 206 determines whether there is sufficient bandwidth before allowing a new connection. Bourlas is silent as to the situation where two mobile stations request a new connection, and so any teachings in this respect must be gleaned from Bourlas' other disclosure. The section quoted immediately above clearly indicates a first-come, first granted regimen for new connections, subject only to bandwidth availability. Apart from the above first-to-request preference, a condition exists whereby a first connection request is denied in Bourlas and a second request is granted, if the available bandwidth is

sufficient to meet the second request but not the first. So clearly Bourlas can not be interpreted as teaching giving a preference to the first high bandwidth connection request over the second, lower bandwidth connection request because Bourlas' result is the opposite. Bourlas clearly does not disclose "receiving a call admission request from a mobile station at the edge of a cell [...] wherein for a mobile station having a high bandwidth requirement, the mobile station is preferentially granted system resources, **as compared to another mobile station requesting call admission,**" as in claim 1.

Referring to Figure 6, Bourlas discloses:

FIG. 6 is a flowchart illustrating the process of call admission control for a new connection between a CPE and the base station. [...] Flow proceeds to block 502 where the base station receiver module receives a request for a new connection. The process continues to block 504 where the CAC module 206 sums the hard bandwidth commitments between the CPEs and base station based on the planned modulations of the CPEs. [...] Flow moves to a decision block 508 where the CAC module 206 determines whether the air link line rate determined at block 506 exceeds the hard bandwidth commitments determined at block 504. If the air link line rate exceeds the hard bandwidth commitments, the process continues to a block 510 where the CAC module 206 allows the new connection," (emphasis added), (par. [0079]); and

"Returning to decision block 508, if the air link line rate does not exceed the hard bandwidth commitments, flow proceeds to a block 522 where the CAC module 206 denies the new connection. The process then returns to block 502 to await the next request for a new connection," (emphasis added), (par. [0083]).

As illustrated in Fig. 6 of Bourlas it is apparent that each call admission control request for a new connection is allowed or denied dependent upon whether "**the air link line rate exceeds the hard bandwidth commitments.**" Thus in Bourland, even if two requests were processed simultaneously they would still be processed independently using the same method for determination of access described in Fig. 6. Moreover, the Applicants contend that there clearly would not be a comparison and a preferential treatment of one new call admission request over another new call admission request. Bourlas simply does not disclose or suggest a method in **the**

process of call admission where a mobile station having a high bandwidth requirement is preferentially granted system resources, **as compared to another mobile station requesting call admission** and having a lower bandwidth requirement.

Clearly, for at least the reasons stated Bourlas can not be seen to disclose or suggest “**receiving a call admission request from a mobile station at the edge of a cell**; and granting system resources to the mobile station based at least in part on a bandwidth requirement of the mobile station, wherein for a mobile station having a high bandwidth requirement, **the mobile station is preferentially granted system resources, as compared to another mobile station requesting call admission** and having a lower bandwidth requirement,” as in claim 1.

Furthermore, regarding the rejection of claim 1 the Examiner states:

“It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Bourlas’ method [in view of Kondo] to incorporate a method where a mobile station, with a higher bandwidth requirement, requesting call admission is assigned a plurality of time slots per frame while a mobile station, with a lower bandwidth requirement, requesting call admission is assigned a single time slot.”

The Applicants respectfully disagree with the Examiner.

According to the teachings of Kondo, the allocation of time slots to a new call is made independent of any other new call, let alone one requesting call admission. Kondo merely discloses allocating differing amounts of time slots to each requester dependent on the transmission speed of the requester.

Kondo discloses:

“**When the new call request is the low transmission speed communication, one time slot is released from the high transmission speed communication** using a maximum number of time slots (steps 509 and 510), and this one time slot is allocated to the new call request (step 511).

Here Kondo appears to disclose releasing a time slot from a high transmission speed communication so as to allocate the slot to a low transmission speed communication during a new call request. For at least this reason Kondo is not seen to overcome the shortfall of Bourlas as stated above.

Furthermore, for at least the reasons stated the Applicants contend that neither Borlas nor Kondo individually or combined disclose or suggest claim 1.

Additionally, the combination of Bourlas, Kondo, and Demjanenko, although such a combination is neither suggested nor deemed appropriate, does not teach preferentially granting system resources, as compared to another mobile station requesting call admission and having a lower bandwidth requirement as claimed. For this reason alone, claim 1 is in condition for allowance. As all of claims of independent claims 7, 14 and 18 recite similar language, for the reasons discussed above, claims 7, 14 and 18 are likewise in condition for allowance.

In addition, for at least the reason that the claims 2, 4-8, 10-13, 15-17, and 19-20 depend from claims 1, 14, and 18, all the claims 1, 2, 4-8, and 10-20 should be allowed.

The Examiner rejected claims 3 and 9 as being unpatentable over Bourlas et al. in view of Demjanenko in further view of Raghavan (2003/0134607). Specifically, the Examiner asserts that Raghavan teaches “a multi-channel communications transceiver that uses any combination of modulation systems such as PAM and QAM.” While taking no position as to the Examiner’s assertions regarding the teachings of Raghavan, it is sufficient to note that Raghavan does not teach preferentially granting system resources to a mobile station requesting call admission **as compared to another mobile station requesting call admission** as claimed. As a result, the combination of Bourlas, Demjanenko, and Raghavan, such a combination neither suggested nor deemed appropriate, similarly fails to teach or suggest this element as recited in claim 1. As claims 3 and 9 are dependent upon claim 1, they are likewise in condition for allowance.

Regarding the rejection of claims 21-25, and 27-28 as being unpatentable over Uebayashi, in view of Kondo and Demjanenko the Applicants respectfully disagree.

Uebayashi discloses:

“If it is the high speed communication, the base station 121 checks whether the current number of the high speed communications (m) plus one is greater than the upper limit of the high speed communications (m.sub.max) at step S312,” (col. 4, lines 34-42), and

“If the communication request is a low speed communication request, the base station 121 sets the variable a at one at step S304. [...], and compares it at step S306 with the upper limit (n.sub.max) expressed in terms of the number of the low speed communications that can be accommodated in the bandwidth,” (col. 4, lines 47-51).

Thus, the Applicants contend that Uebayashi is not seen to compare the high speed communication request to the low speed communication request. Further, Uebayashi does not appear to teach preferentially granting system resources to a mobile station having a high bandwidth requirement requesting call admission as compared to another mobile station requesting call admission and having a lower bandwidth requirement as claimed. As a result, the combination of Uebayashi, Kondo, and Demjanenko, such a combination neither suggested nor deemed appropriate, similarly fails to teach or suggest, as claim 21 recites in part:

“receiving a call admission request from a mobile station located near a cell edge to grant system resources to the mobile station based at least in part on a bandwidth requirement of the mobile station, where for a mobile station having a high bandwidth requirement the resource granting unit preferentially grants system resources, as compared to another mobile station requesting call admission and having a lower bandwidth requirement”

Thus, claim 21 is seen as allowable. In addition, as claims 22-25, and 27-28 are dependent upon claim 21, they are likewise in condition for allowance.

The Examiner rejected claim 23 as being unpatentable over Uebayashi, in view of Kondo and Demjanenko and further in view of Raghaven. The Applicants contend that although the

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Applicants do not agree the combination is feasible or possible, for at least the reasons already stated and the reason that claim 23 depends from claim 21, the references cited are not seen to disclose or suggest claim 23. Thus, claim 23 is seen as allowable.

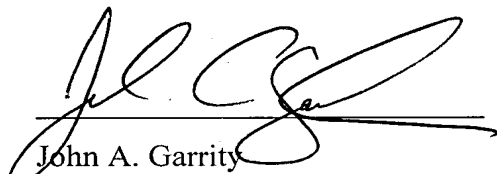
Regarding the rejection of claim 26, the Examiner rejected claim 26 as being unpatentable over Uebayashi, in view of Kondo and Demjanenko and in further view of Leung. In the rejection the Examiner states:

“The combination of Uebayashi, Kondo and Demjanenko, teaches all aspects of the claimed invention as set forth in the rejections of claim 21 but does not disclose a control unit,” and “Leung discloses a control unit”

The Applicants contend that for at least the reasons already stated the combination of Uebayashi, Kondo and Demjanenko does not disclose or suggest claim 21 from which claim 26 depends. Thus, the combination of the references, although such a combination is neither suggested nor deemed appropriate, does not disclose or suggest claim 26, and claim 26 is seen as allowable.

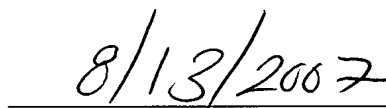
For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record. Should any unresolved issue remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

Respectfully submitted:



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